

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
3 March 2005 (03.03.2005)

PCT

(10) International Publication Number  
WO 2005/019496 A1

(51) International Patent Classification<sup>7</sup>: C23C 16/00,  
16/06, 16/455, C30B 25/02

(74) Agents: MILLET, Marcus, J. et al.; Lerner, David, Lit-  
tenberg, Krumholz & Mentlik, LLP, 600 South Avenue  
West, Westfield, NJ 07090 (US).

(21) International Application Number:

PCT/US2003/026112

(22) International Filing Date: 20 August 2003 (20.08.2003)

(25) Filing Language: English

(26) Publication Language: English

(71) Applicant (for all designated States except US): EM-  
CORE CORPORATION [US/US]; 145 Belmont Drive,  
Somerset, NJ 08873-1214 (US).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU,  
CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC,  
LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW,  
MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC,  
SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,  
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(72) Inventors; and

(84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),  
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,  
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO,  
SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM,  
GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

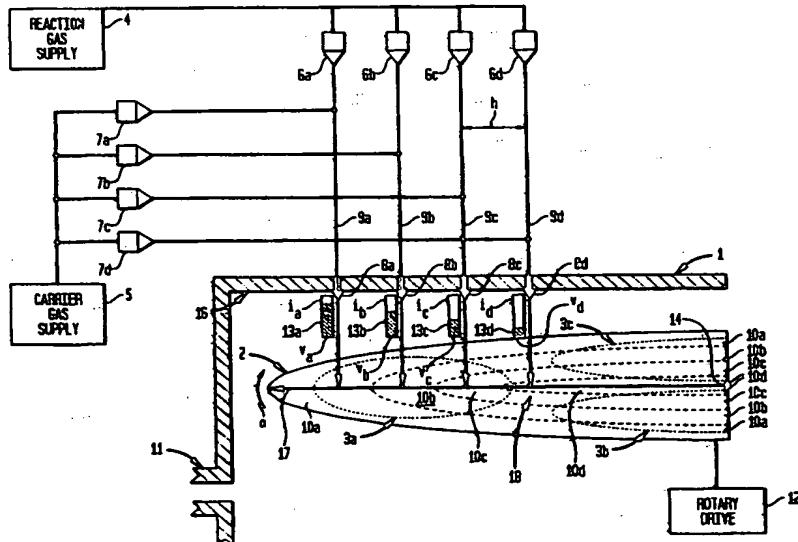
(75) Inventors/Applicants (for US only): MURPHY, Michael  
[US/US]; 9J 1 JFK Boulevard, Somerset, NJ 08873 (US).  
HOFFMAN, Richard [US/US]; 2 Mitchell Lane, Clinton,  
NJ 08809 (US). CRUEL, Jonathan [US/US]; 314 Com-  
mons Way, Somerset, NJ 08873 (US). KADINSKI, Lev  
[US/US]; 1068 Tullo Farm Road, Bridgewater, NJ 08807  
(US). RAMER, Jeffrey, C. [US/US]; 8 Penny Lane, Flem-  
ington, NJ 08822 (US). ARMOUR, Eric [US/US]; 14 Lan-  
ing Avenue, Pennington, NJ 08534 (US).

Published:

- with international search report
- with amended claims

[Continued on next page]

(54) Title: ALKYL PUSH FLOW FOR VERTICAL FLOW ROTATING DISK REACTORS



WO 2005/019496 A1

(57) Abstract: In a rotating disk reactor (1) for growing epitaxial layers on substrate (3), gas directed toward the substrates at different radial distances from the axis of rotation of the disk has substantially the same velocity. The gas directed toward portions of the disk remote from the axis (10a) may include a higher concentration of a reactant gas (4) than the gas directed toward portions of the disk close to the axis (10d), so that portions of the substrate surfaces at different distances from the axis (14) receive substantially the same amount of reactant gas (4) per unit area. A desirable flow pattern is achieved within the reactor while permitting uniform deposition and growth of epitaxial layers on the substrate.



*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

RECEIVED  
MAR 7 - 2005  
LDLKAM